

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

An Attachment for a Floor Cleaning Machine

We, C. T. & R.E. INC., a corporation organized under the laws of the Commonwealth of Massachusetts, United States of America, of Annisquam Massachusetts, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates generally to floor cleaning equipment and more particularly to an attachment for a floor cleaning machine.

According to the present invention there is provided an attachment for a floor cleaning machine having oscillatory drive means, the attachment comprising a drive element adapted to be coupled with the drive means of the machine whereby when said drive means is operative said drive element is oscillated, a support plate intended to be horizontally disposed adjacent a floor when said attachment is in use, said drive element being affixed to the upper surface of said support plate, and a resilient pad affixed to the underside of said support plate.

For a better understanding of the invention and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawings, in which:—

Fig. 1 is a perspective view of a cleaning attachment according to the present invention and showing a drive plate, support plate and sponge pad embodied therein;

Fig. 2 is a perspective view of a floor cleaning machine with the cleaning attachment mounted thereon and disposed against a baseboard;

Fig. 3 is a perspective view of a modified form of cleaning attachment designed specifically for floor cleaning, and

Figs. 4, 5, 6 and 7 depict a variety of

baseboard configurations which can be cleaned with the attachment of Figures 1 and 2, illustrated configurations being meant to be representative of the complete range of baseboard sections found in buildings today.

Referring initially to Fig. 1 a cleaning attachment embodying the present invention is generally designated by the arrow 10 and includes a circular drive plate 11 of substantially annular configuration, drive plate 11 having a central orifice 12 defined peripherally by an upwardly disposed lip 13. A plurality of support ribs 14 are located radially about lip 13, sloping downwardly therefrom and terminating substantially toward the outer edge of drive plate 11, ribs 14 acting as stiffening webs between lip 13 and plate 11. Rivet holes 15 are located in spaced apart relationship through plate 11 substantially adjacent the outer edge thereof, holes 15 being adapted to receive rivets 16 therein during the subsequently described assembly of cleaning attachment 10.

A support plate 17 of rectangular configuration has a low flanged end 18 and an opposite end 19, end 19 having formed thereon a perpendicularly upwardly disposed support bracket 20, bracket 20 comprising a vertical end wall 21 and two right-angled flanking walls 22, walls 22 sloping downwardly on their inner edges 23 to meet support plate 17.

It will be observed that a plurality of parallel spaced apart 'teeth' 24 are formed on end wall 21, teeth 24 projecting inwardly therefrom and angled slightly downwardly, the utility of such teeth being detailed subsequently in this specification.

Stiffening channels 25, roll formed in the body of support plate 17 in a longitudinal manner ensure the maintenance of rigidity therein.

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It will be readily apparent that drive plate 11 and support plate 17 form a sub-assembly of cleaning attachment 10 and that they are united in parallel spaced apart relationship by means of rivets 16, spacer members 26 being inserted therebetween and receiving the shanks of rivets 16.

Still referring to Fig. 1 it will be seen that a pad 27 of rubber like material is affixed to the underside of support plate 17 and formed vertically upwardly at one end, being affixed thereat to the outer side of end wall 21 of support bracket 20.

The method of affixing pad 27 to the underside of plate 17 and the outer side of wall 21 embodies the use of a strong adhesive which should be substantially impervious to moisture and those chemicals found in the majority of conventional cleaning pastes, solutions and the like. Furthermore, it is desirable that the texture of pad 27 be of the open or spongy type.

It will be observed that the sectional thickness of pad 27 is not uniform, the end thereof adjacent to flanged end 18 of support plate 17 being of maximum thickness whereafter pad 27 diminishes gradually toward end 19 of the said support plate, the purpose of this configuration being explained later.

Two spring and chain members 28 are each affixed to a pertinent flanking wall 22 of support bracket 20 and have formed on their free ends hook portions 29.

Referring now to Figs. 1 and 2 it will be seen that cleaning attachment 10 has been mounted beneath a conventional floor cleaning machine indicated at 30. The cleaning machine 30 is of the type having a vertical, rotatable drive shaft the lower end of which is formed as an eccentric. This eccentric has mounted thereon a freely rotatable disc, the disc normally carrying a floor maintenance element such as a brush or pad. To mount the attachment 10 on the cleaning machine the maintenance element is removed and the eccentric disc is entered in the orifice 12 whereby, upon oscillation of said disc, oscillatory motion is imparted to cleaning attachment 10 via drive plate 11 and directionally illustrated by double headed arrow X—Y.

A section of material 31 having either abrasive, cleaning or polishing characteristics depending upon the requirements of the particular job to be performed, is attached to the outer surfaces of pad 27 the 'open' texture thereof causing material 31 to cling thereto. Additionally, the weight of machine 30 and the friction between pad 27 and material 31 ensures attachment therebetween.

Referring particularly to Fig. 2 it will be seen that material 31 is formed over the top edge of vertical end wall 21 of support bracket 20, thereafter being impaled upon teeth 24 which ensure secure attachment. Spring and chain members 28 are hooked onto the body

of machine 30 the spring portions being tensioned thereby and correcting any tendency for cleaning attachment 10 to 'yaw' or twist.

In operation machine 30 is located against baseboard 32 and moved therealong in the direction of arrow A, the vertical portion of material 31 being imposed directly upon the said baseboard 32 and assuming the contours thereof due to the resilient character of pad 27.

As machine 30 moves along in the manner described, cleaning attachment 10 oscillates rapidly along arrow line X—Y thereby thoroughly cleaning out or stripping wall baseboard 32.

Little or no manual pressure is required to bias cleaning attachment 10 inwardly towards baseboard 32 as the tapering configuration of pad 27 automatically inclines the attachment and its parent machine 30 there-toward.

Referring now to Figs. 4, 5, 6 and 7, it will readily be apparent that all forms and configurations of baseboard 32 in addition to the conventional form of terrazzo or marbled baseboard 33 (which is, in effect, a vertical termination of the floor covering medium) may be treated by cleaning attachment 10.

Material 31, which may be supplied in diverse forms, such as for instance, nylon woven pads impregnated with abrasive granules of various coarsenesses, or chemical compounds having cleaning properties, or bristles set into suitable backing, should be of a suitable rectangular configuration co-operable with the dimensions of pad 27.

Referring now to Fig. 3 wherein an alternative form of cleaning attachment is illustrated and generally designated by the arrow 40, it will be seen that an identical form of drive plate 11 is employed as in cleaning attachment 10, the details thereof being common to both attachments.

A support plate 41 of rectangular configuration has shallow, vertically disposed flanges 42 formed upwardly on its outer edges and longitudinal stiffening channels 43 formed therein to ensure rigidity.

Attachment of drive plate 11 to support plate 41 is identical to that described in cleaning attachment 10 and, therefore, it will not be further detailed.

A pad 43 of identical textural character to pad 27 is of rectangular configuration and accommodates itself to the area of support plate 41, being affixed thereto by the heretofore described manner of gluing.

It will be observed that pad 43 has a centre section 44 of reduced thickness, this ensuring that during operation an even and uniform pressure is exerted upon the floor over which it passes.

It will be apparent that the application of cleaning attachment 40 is directed solely to floor treatment, material 31 being placed

therebeneath and effecting the required results as described previously. As with cleaning attachment 10, cleaning attachment 40 is supplied with a plurality of spring and chain members 28 to prevent yawing of the attachment during operation thereof.

WHAT I CLAIM IS:—

1. An attachment for a floor cleaning machine having oscillatory drive means, the attachment comprising a drive element adapted to be coupled with the drive means of the machine whereby when said drive means is operative said drive element is oscillated, a support plate intended to be horizontally disposed adjacent a floor when said attachment is in use, said drive element being affixed to the upper surface of said support plate, and a resilient pad affixed to the underside of said support plate.

2. An attachment according to claim 1 in which said support plate has at least one straight edge, and a support bracket affixed to said support plate along said edge and having a flat surface extending upward from said edge, and said resilient pad extends from said underside of said support plate upwardly to cover said flat surface, whereby when said attachment is in use said portion of said resilient pad which covers said upwardly extending surface may be brought into contact with a baseboard adjacent an edge of a floor being cleaned.

3. An attachment according to claim 1, wherein said resilient pad is thicker at the outer periphery of said support plate than at the median portion thereof, and the thickness of said pad tapers gradually from the outer edge to the median portion.

4. An attachment according to claim 2, wherein said resilient pad is thinner at said straight edge than at the opposite edge of said support pad and tapers gradually from the thicker portion to the thinner portion.

5. An attachment according to any one of the preceding claims wherein said resilient pad is made of a sponge-like material adhesively held to said support plate, and when limited according to claim 2, to said flat surface.

6. An attachment according to any one of the preceding claims, including a flexible working pad having, as desired, abrasive, cleaning or polishing characteristics, which is detachably retained against the outer surface of said resilient pad.

7. An attachment according to claim 6 wherein said working pad is held against said outer surface by friction when the attachment is in use.

8. An attachment according to claim 6 as limited by claim 2, having retaining means for said working pad along an upper edge of said support bracket away from said flat surface thereof, wherein said working pad is affixed along one edge to said retaining means.

9. An attachment according to any one of the preceding claims wherein said drive element is a plate having a circular orifice formed therethrough, and said plate is attached to said support plate by riveting means.

10. An attachment according to any one of the preceding claims wherein said support plate is rectangular.

11. An attachment according to claim 11 including upstanding flanges at the major portion of the periphery of said support plate.

12. An attachment according to claim 11 as limited by claim 2 in which one of said flanges is higher than the others to constitute said support bracket.

13. An attachment according to claim 11 or claim 12 in which said flanges are integral with said support plate.

14. An attachment according to any one of the preceding claims including a plurality of resilient restraining members each connected at one end to said support plate and adapted for coupling at the other end to the cleaning machine, to restrain said support plate from rotation about said drive means when said drive element is coupled thereto.

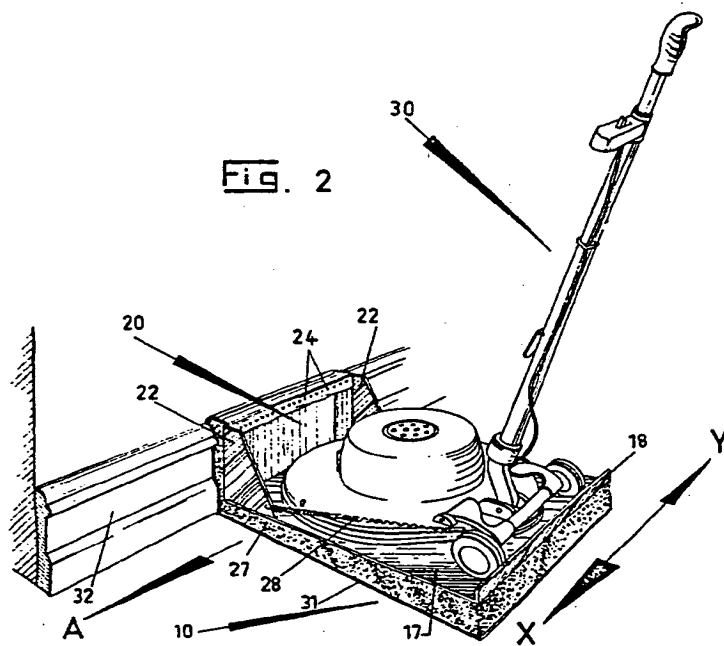
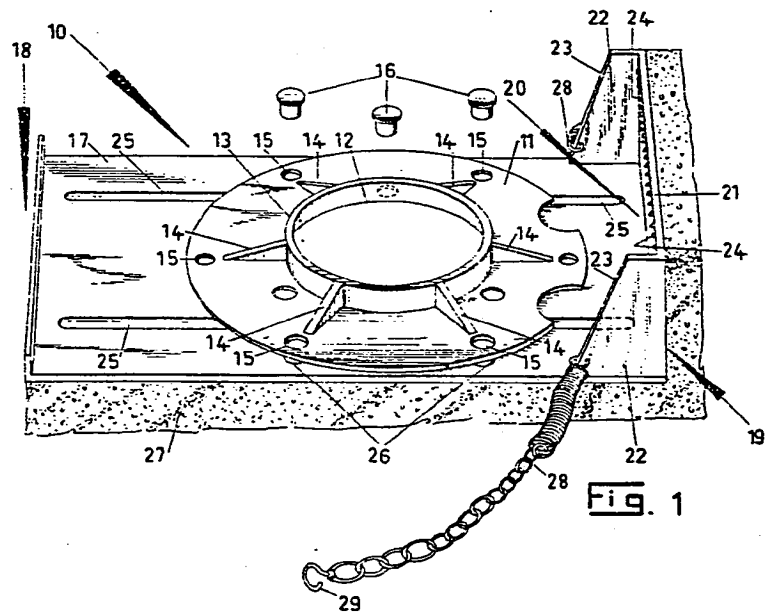
15. An attachment according to claim 14 as limited by claim 2 having two restraining members, one attached at one end to said support plate via an extension from said support bracket near one of the ends thereof, and the other attached at one end to said support plate via an extension from said support bracket near the other end thereof.

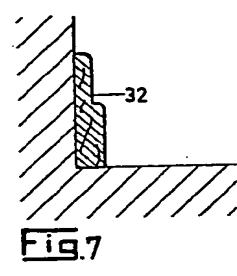
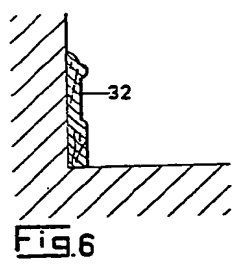
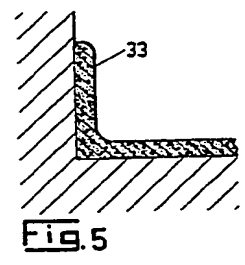
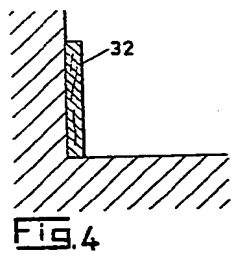
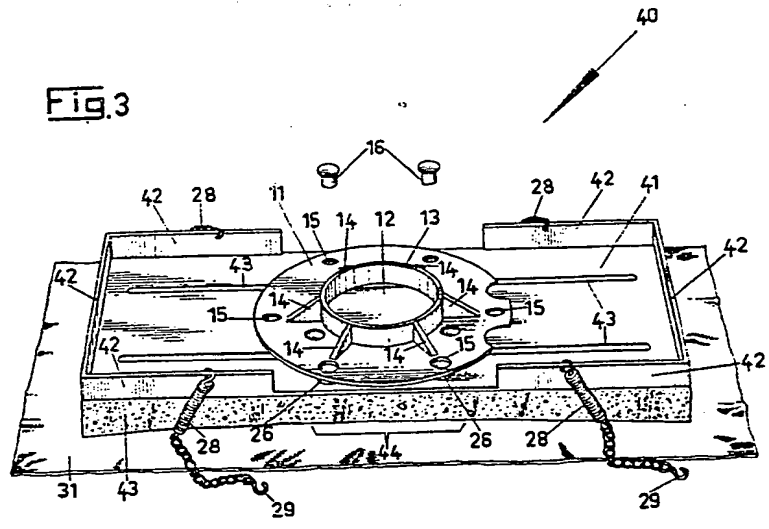
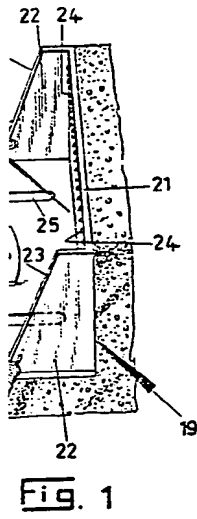
16. An attachment for a floor cleaning machine, the attachment being as herein described with reference to and as illustrated in Fig. 1, or Figs. 1 and 2, or Fig. 3 of the accompanying drawings.

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 the Original on a reduced scale
 Sheets 1 & 2

